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10/582,215

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Robert Greiner

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EXAMINER

KHATRI, PRASHANT J

ART UNIT

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1794

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                       |                                       |  |
|------------------------------|---------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/582,215  | <b>Applicant(s)</b><br>GREINER ET AL. |  |
|                              | <b>Examiner</b><br>PRASHANT J. KHATRI | <b>Art Unit</b><br>1794               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9,11-14 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9,11-14 and 16-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/2/2009</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

In response to RCE filed 6/2/2009. Claims 9, 11-14, and 16-21 are pending. Claims 9, 16, and 19 were amended. Claims 10 and 15 were cancelled. Claims 20-21 were added as new.

#### ***Request for Continued Examination***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/2/2009 has been entered.

#### ***Claim Objections***

2. Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Independent claim 9 recites the limitation of the electrically conducting and/or metallic filler as being copper while dependent claim 13 broadens the scope of what would be considered to be an electrically conducting and/or metallic filler. Given that the independent claim contains a

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narrower limitation than that of the dependent claim, claim 13 is considered to be failing to further limit the subject matter of independent claim 9.

3. Claim 19 objected to because of the following informalities: It is noted that claim 19 is not a new claim given the claim set filed 9/9/2008 contained claim 19 and was previously examined. In the interest of compact prosecution, Examiner has examined the present claims on the merits and as such requires amending the claim to read “currently amended” within the parentheses. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to the claim dependency of claim 17 given the present claim recites that the above claim is dependent on a cancelled claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 9, 12-13, 16, and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakazawa (**JP 09-241420**).

8. Nakazawa discloses a leadless electroconductive resin composition. Concerning claims 9, 13, 16, and 19-21, Nakazawa discloses a composition comprising a thermoplastic resin, an electroconductive fiber such as a copper fiber at a weight from 1-50 wt% and a metal compound alloy consisting of tin, bismuth, and zinc wherein such a compound alloy has a melting temperature of about 117°C to about 280°C (**abstract; para. 0016-0017**). Further, the formation of a fiber network by means of the leadless metal compound alloy would be considered intrinsic given metal compound alloy disclosed by Nakazawa meets the present limitations. Concerning the article as presently claimed in claim 16, it is noted that the composition can be molded into various housings and the like (**para. 0020**).

9. Claims 9, 11-14, 16, and 18-21 rejected under 35 U.S.C. 102(b) as being anticipated by Nakagawa et al. (**US 20020043398**).

10. Nakagawa et al. disclose a conductive plastic composition and articles thereof. Concerning claims 9 and 19-21, Nakagawa et al. disclose a composition comprising a thermoplastic resin, a lead-free solder that melts during plasticization, and metal powder or mixture of metal powder and metal short fibers that assists the fine dispersion of particles of the lead-free solder within the thermoplastic resin (**para. 0015**). Further, it is noted that the particles of the lead-free solder are dispersed such that said particles are

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in an unbroken connection throughout the thermoplastic resin (**para. 0016-0018, 0044**).

The lead-free solder is comprised of a metal that has a melting point lower than 350°C and is comprised of zinc, tin, bismuth, and the like in addition to alloys of said metals (**para. 0040-0041**). The metal powder and metal short fibers are comprised of copper and the like (**para. 0042**) having sizes of about 10 microns (**para. 0048-0056**).

Furthermore, the metallic component (sum of solder and powder) above is present in an amount from 30 to 75 vol. % (**para. 0043**). The resultant composition has a volumetric resistivity of  $10^{-3}$  Ω-cm or less (**para. 0017**). Given the above disclosure regarding the amount of metallic component and the resulting volumetric resistivity, it is clear that the amount of metallic component, which includes the metal powder, within the composition would include and encompass the presently claimed proportion in claims 9, 11, and 19 since the disclosure of Nakagawa et al. discloses the volumetric resistivity encompassing the presently claimed specific volume resistance in claims 12 and 18. Additionally, since the above components within the composition are the same as that presently claimed, the formation of a fiber network is considered to be intrinsic to the disclosure of Nakagawa et al. Concerning claim 16, it is noted a shaped body can be formed from the above composition (**para. 0065-0069**).

11. Claims 19 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Katsumata et al. (**US 5,554,678**).

12. Katsumata et al. disclose an electroconductive resin material comprising a low-melting point metal compound, electroconductive fibers and/or particles, and a

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thermoplastic resin (**abstract**). The thermoplastic resin comprises polystyrene, ABS, PET, and other like materials (**col. 2, lines 37+**). The low-melting point metal compound is comprised of tin and has a melting point of 100°C to 250°C (**col. 2, lines 3+**). The metal conductive fiber is comprised of copper and other conductive metals and has a diameter of 5 to 100 microns with a length less than 10 mm (**col. 1, lines 53+**). The filler material further comprises a carbon fiber material or carbon black material (**col. 4, lines 3+**). Examiner takes the position the carbonaceous material (i.e. carbon fiber and carbon black) is a known conductive material in the art. Concerning the copper fibers, prior art discloses the fibers comprise 0.5 to 30 wt% of the total composition (**col. 1, lines 62+**). The carbonaceous material is from about 0.5 to 50 wt% (**col. 2, lines 30+ for Carbon Fiber; col. 4, lines 8+ for Carbon Black**). Examiner takes the position that the sum of the conductive materials (i.e. the copper fibers and carbonaceous material) will span from 1 to 80 wt% of the total composition and would encompass the range claimed by Applicants. Furthermore, as shown by prior art, the total composition of the metal fiber, low melting point metal, and vapor-phase grown carbon fibers has a total of 60 wt% (**Table 1; nos. 6-8**). The volume resistivity of the composition is about  $6 \times 10^{-4} \Omega\text{-cm}$  for moldable compositions (**Table 2**). It is noted that an article with the above composition is produced by normal plastic molding means (**col. 2 bridged to 3, lines 55+**). Regarding the formation of a fiber network, Examiner takes the position that the formation of said network is inherent to the disclosure as the fibers are surrounded by a polymer matrix and after processing would result in the metal fibers interposed within the matrix.

***Response to Arguments***

13. Applicant's arguments, see p. 7, filed 6/2/2009, with respect to the 35 USC 112, 1<sup>st</sup> paragraph rejection of claims 9-18 have been fully considered and are persuasive.

The rejection of the above claims has been withdrawn.

14. Applicant's arguments, see p. 7-8, filed 6/2/2009, with respect to the rejection of claims 9-18 under Iwase have been fully considered and are persuasive. The rejection of the above claims has been withdrawn. The present claims overcome the previous rejection.

15. Applicant's arguments, see p. 8-9, filed 6/2/2009, with respect to the rejection of claims 9-10 and 12-17 under Ito have been fully considered and are persuasive. The rejection of the above claims has been withdrawn. The present claims overcome the previous rejection.

16. Applicant's arguments, see p. 9-10, filed 6/2/2009, with respect to the rejection of claims 9-18 under Katsumata have been fully considered and are persuasive. The rejection of the above claims has been withdrawn. However, upon further reconsideration, the reference still applies to the present limitations of claims 19 and 21. Applicant asserts that Katsumata is silent to a composition that contains a conductive fiber and/or particle in a proportion between 30% and 70%. However, as shown in Katsumata and previously disclosed, Katsumata discloses several examples wherein the total amount of electrically conductive materials comprising metal fibers and vapor



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grown fibers measuring between 50.5 wt% to 58 wt% which meet the limitations of instant claim 19.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRASHANT J. KHATRI whose telephone number is (571)270-3470. The examiner can normally be reached on M-F 8:00 A.M.-5:00 P.M. (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/  
Supervisory Patent Examiner, Art Unit 1794

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Examiner  
Art Unit 1794

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